

F WU
80
T167m
1914

THE MOUTH
AND
TEETH



WU 80 T167m 1914

50630140R



NLM 05263418 5

NATIONAL LIBRARY OF MEDICINE

SURGEON GENERAL'S OFFICE
LIBRARY.

Section

No. 113,
W. D. S. G. O.

No. 220019

3-513

THE MOUTH

TEETH

Transferred from the Library
of Congress under Sec. 58,
Copyright Act of March 4, 1909

THE MOUTH AND TEETH

By ✓
MAUDE MULLER TANNER, D. M. D.
PORTLAND, ORE.

—
COPYRIGHT 1914
—

220019

LIBRARY
SURGEON GENERAL'S OFFICE
NOV 2 - 1914

WU

80

T/67m

1914

Film 9632 Item 2

This work is inscribed to my much esteemed friends,
whose timely counsel and kindly advice, made possible
my professional career.:

Burton Lee Thorpe, M. D., D. D. S.

R. O. Clarida, Professor.

H. C. Smith, M. D.

AUG 28 1914

©CL A379501

202

INTRODUCTION.

The aim of this work is to teach the evils of neglect, its results and how to overcome them. Prevention is better than the best cure.

I expect this book to be read and studied by school children, and have worded it as simply and clearly as possible, leaving out all technical words and terms that would tend to confuse young minds.

Older people will obtain a vast amount of knowledge from it and will get excellent results by following its teachings.

INDEX.

	PAGE
Chapter I. Anatomy of the Mouth and Teeth.....	5
Chapter II. The Lower Jaw.....	7
Chapter III. The Upper Jaw.....	10
Chapter IV. The Mouth	14
Chapter V. Bacteria of the Mouth.....	19
Chapter VI. The Temporary Teeth.....	21
Chapter VII. The Permanent Teeth.....	25
Chapter VIII. Decay of the Teeth and Its Cause.....	30
Chapter IX. Deposits on the Teeth.....	34
Chapter X. Regulating Malarticulated Teeth.....	38
Chapter XI. Extracting the Teeth.....	41
Chapter XII. Old Fashioned Way of Thinking.....	43
Chapter XIII. A Talk on Foods.....	45
Chapter XIV. Tuberculosis or Consumption.....	47
Chapter XV. Uses of the Teeth.....	48
Chapter XVI. Hygiene of the Mouth.....	49
Chapter XVII. Daily Care of the Mouth.....	51
Chapter XVIII. How to Use the Tooth Brush.....	54
Chapter XIX. Sterilization of the Tooth Brush.....	56
Chapter XX. The Gums	58
Chapter XXI. The Tongue	60
Chapter XXII. The Voice and Speech.....	61
Chapter XXIII. Hereditary Characteristics	62
Chapter XXIV. Habit and Its Results.....	63
Chapter XXV. Summary	70

THE MOUTH AND TEETH

CHAPTER I.

Anatomy of the Mouth and Teeth

Define Anatomy. Anatomy means the science which treats of organized bodies.

Since our bodies are composed of minute particles or atoms, we should know as much about their composition, how developed, and their uses, as is possible for us to understand, in order to maintain good health.

I think my little readers will agree with me, and tell me, should I have the pleasure of talking with them in person, that their bodies are made up of bones, muscles, fat, nerves, veins, arteries, hair, nails, blood and teeth. But to tell me how many bones, how they look and the number of muscles attached to each bone, and how the nerves and blood vessels manage to get here, there, and everywhere throughout the body and through the bones, would be more than you could do.

So we are going to tell you about them in order that you may know something about yourself, and we will take the mouth and teeth for the basis, as the mouth is the main entrance to the body. No doubt you never thought that your bodies contain 200 bones of all shapes and sizes. They are divided into four classes: Long, short, flat and irregular, and they are all very important; if even one of these bones were missing, we would be malformed or crippled.

The face contains 14 bones, and the head contains 8, making 22 in all, that go to make up the head and face. The bones,

then, are the framework of our bodies, although we will only tell you about the bones that compose the mouth, as you will learn about the rest of them as you advance in your studies; the others are, nevertheless, important. The bones of the head that form the cavity for the mouth will be our starting points or foundation for study here. There are too many in all for you to learn about just yet, so we will begin by telling you all about the two that compose the lower part of the face and mouth, which consists of two bones, the lower jaw and the upper jaw.

They are placed in such a manner as to form a hollow place called the mouth, which is made up of muscles, blood vessels, nerves, glands and teeth. The lips seal the mouth at will perfectly, and will open and close just as we choose.

QUESTIONS.

1. How many bones in the body?
2. How many bones in the head and face?
3. How are the bones divided, as to classification?

CHAPTER II.

The Lower Jaw

We will tell you about the lower jaw first, as it is hardly as complicated as the upper one: The bone is classed with the irregular bones, is a horseshoe shape, with a body, (what is meant by the body is the part which composes the greater portion of anything,—we speak of the ocean or sea as being a body of water, or anything that is greatest). The same word applies to smaller things, such as we are talking about. The bone, then, has a body, two surfaces, an outer and an inner surface; also has two angles which help to form the side of the face.

The bone articulates or joins together with the Temporal bone (one of the bones of the head) like the hinge on a door. This is for the purpose of opening and closing the mouth, and masticating the food.

The bone has little holes or openings in it to let the blood vessels and nerves pass in and out. Again, they give to the bone food upon which it lives; also carries away wasted used-up food, as the bones, muscles and all living matter require food to live on. They need air, water, different kinds of mineral salts, and other materials obtained through the food eaten. These things are required for the support of life just like the little flowers in your garden. They have to have air, water, sunlight, rich soil, heat and many other things obtained through the air and soil for their support. They grow and grow. That is the way with our bodies. While very young, these things are required for growth, and when we are grown, we still need food to keep our bodies warm and healthy.

That is why the holes are in the bones to let the arteries in that the bone can be fed, and to let the veins get out, that the

wasted products which are of no more use, may be carried away and thrown off. If a bloodvessel or nerve get a severe injury, or get cut into, or become diseased, the food supply will be cut off, and the bone and tissues surrounding the injury will die.

The nerves are to the system, or perform the same functions, as the wires do to a telephone system. They carry messages to the brain and back again, as when we are going to take food into the mouth, to chew the food, to laugh, cry, sing, or any act, the nerves take a message to the brain, telling the brain centers what is wanted; another message is sent back in answer, telling the mouth to open or close, our eyes to close or look at different objects, far or near, telling us to walk, run, jump as we wish. The nerves that enter the holes, together with the bloodvessels, are so arranged that every tooth is supplied with a little fine, white nerve which enters at the end of each root, through a little opening for that purpose.

The bone is heavy and very strong, but a heavy blow will easily break or fracture it. The bone is weaker on either side of the chin; therefore, fractures or breaks take place more frequently there.

The bone has little grooves, ridges and rough places for the attachments of muscles, as the muscles could not stay so firmly attached to a smooth surface of bone as they do to rougher surfaces.

The bone is next to the earliest formed bone of the body, the clavicle being the first. We find fifteen pairs of muscles attached to this bone which surround it and contour it into the shape and beauty of the lower part of the face. The part of bone that contains the teeth is somewhat like honey-comb, or porous like, and for that reason is easily fractured. Many times when a tooth has to be ¹extracted, a part of the honeycombed process will come away with the tooth. Many persons will be very much alarmed and think the bone has been broken, when it is only a small part of the process, and amounts to but little, as

1. Extracted, means withdrawn or taken away.

the process or honey-combed bone only serves to hold the teeth in position; after the teeth are lost, the process absorbs away and leaves the bone smooth and dense in a few months or years.

Breaking the jaw bone by extracting the teeth is seldom done, although in many cases the jaw will be dislocated when extracting the teeth, or even in suddenly opening the mouth. These conditions rarely occur when the muscles are strong and healthy, but are met with frequently when the muscles and ²ligaments are weak and in ³abnormal condition.

When we are small, there is only room for ten teeth in each jaw bone, but at certain ages (as you will find later) these little teeth are lost, one, two or three at a time, until they are all out, or should be out. There are many cases where they remain and become wedged between the other teeth, and can't get out. Following these little ones, come the large, permanent ones that are supposed to last throughout life. But frequently through neglect and disease they are lost while yet very young. That is why we are going to teach you about the mouth and teeth, and how to prevent their loss.

The general health depends upon good teeth and a healthy mouth, and without these, we make a failure at everything we go about; for pray tell who can succeed in any walk of life, any position, profession, home life, or business of any kind, with poor health, a bad personal appearance, and who will tolerate an offensive breath?

-
2. Ligaments. Tough fibrous bands connecting the muscles to the bones.
3. Abnormal. Not normal, contrary to usual conditions.

QUESTIONS.

1. How does the body obtain food upon which it lives?
2. How is used up food carried away from the system?
3. For what purpose is food after youth?
4. What bone forms first in the body? What one second?
5. How are messages carried to the brain from all parts of the body?

CHAPTER III.

The Upper Jaw

The upper jaw is of great importance on account of so many diseases and injuries to which it is liable. It is next to the lower jaw bone as to size. There are two of these bones that join together in the middle of the face, or the ¹median line, as it is known. To determine the median line, take a point midway between the temples on the forehead. continue the line downward, between the eyes, down the nose and over the tip of the nose, over the mouth to the tip of the chin. (Have pupils demonstrate). This line will come directly over the union of the two upper jaw bones.

The bone assists in forming the head and face: The roof of the mouth, the floor and outer part of the nose, and the floor of the ²orbit.

The bone has a body (as did the lower jaw) and four ³processes. The body is somewhat shaped like a cube and is hollow on the inside. This hollow is called the ⁴Antrum of ⁵Hymore.

The bone has four surfaces, viz., the outer, the orbital (or upper), the posterior and the inner surface. The inner surface forms the roof or palate of the mouth; the outer surface forms the contour of the side of the face and the cheek; the orbital (as the name tells us) forms the floor of the orbit; the posterior surface joins with other bones of the head and face, thus helping to build and contour the head and face.

1. Median, middle of, midway, between.

2. Orbit, the bony socket which contains the eye.

3. Processes, are little projections of bone like little arms.

4-5. Antrum of Hymore. 4. Antrum means a cavity or chamber.

5. Hymore, the name of the man who discovered the antrum.

The processes are little projections of bone, like little arms extending out, and serve for the attachment of muscles, and to ⁶articulate with other bones.

The Antrum of Highmore is a hollow place in the bone, and corresponds to the points of the face called the cheek. There are two cavities, or antrums, one on either side of the face. The cavity or antrum is lined with a thin membrane that secretes a fluid which keeps the bone moist inside, and also to give it food, as the membrane is supplied with small bloodvessels and nerves.

The antrum has a little ⁷duct that empties into either side of the nose; the fluids are thrown off and away from the antrum in this manner, thus carrying away waste and foreign material from the antrum and from the duct as well; also emptying into the nose, giving moisture, and clearing the nostrils of dust and contamination as it goes along, the secretion has now finished its work and is thrown away as waste.

The antrum is subject to many kinds of disease, and many times the discharge will come out through the nose if the opening becomes closed. Severe troubles are often met with great pain, and in some cases the bone will separate and cause the eyes to become injured or diseased. There are cases where the eye will be pushed out of the socket due to the pressure from bad swelling of antrum troubles. A good many of these conditions come from the teeth, as they often penetrate the floor of the antrum and extend into it, so that if roots of teeth that extend into the antrum are badly diseased, they will cause troubles as before stated. Foreign materials are often forced through the teeth that are badly broken down into the antrum; such things as toothpicks, pins, food, etc. Neuralgia is often caused from these conditions, due to pressure on the nerves, through swelling, feverish tissues or from growths, like Tumors, Cancers, Abscesses, and many other conditions. Some of the nerves and bloodvessels that supply the upper teeth pass through the antrum.

6. Articulate, to join together.

7. Duct, a tube for the secretions and excretions.

Owing to the thinness of the bones of the antrum, a tumor can easily force the bones apart, causing the face to enlarge, the eyes to be forced out of place, the nose closed, and the mouth closed in extreme cases. These conditions come about according to the growth and size of the tumor. Many times the teeth have to be extracted to give room for the growing tumor. Little or nothing can be done for such cases, after they get a good stand.

Most of the conditions are started from decayed teeth whose roots extend into the antrum. Nature cannot destroy the poison; therefore, disease and abnormalities, which have just been mentioned, take place. Many serious operations can be avoided if these causes are checked in time; otherwise, hopeless invalidism or loss of life follows as the results of thoughtlessness.

People forget that little things, can, and do result in big, harmful ones, and many times cause great suffering and sorrow.

Repeating again that the antrum is so situated, and the walls so thin, that many injuries, and disease, occur thereabout.

The bone has the same honey-combed process for the reception and retention of the teeth as has the lower one.

The bones are usually spoken of as being only one bone; the two bones being so closely and firmly united, although when they fail to unite (as they sometimes do) the case is then called Hair-lip or Cleft Palate.

The same conditions are met with in the upper jaw as in the lower when teeth are extracted; pieces of the process may come with the teeth.

Fractures of the upper jaw are very hard to manage, owing to the fact that bandages can hardly be made to stay in place.

A heavy blow will crush the walls of the antrum, and cause the face to be disfigured as a rule.

The palatal surface forms the roof of the mouth. This part of the bone is comparatively smooth; some little openings are in this bone also, for the entrance and exit of bloodvessels and nerves. It also has a few rough places for the attachment of muscles.

In adults the honey-comb process contains eight teeth in each bone, making sixteen in all; and five in each jaw in children under six years, making ten in the full upper jaw.

The bone belongs to the class of irregular bones, and articulates with nine bones of the head and face. It has eleven muscles attached to either jaw, making twenty-two muscles to the upper bone.

This is a very important bone on account of being one of the main bones to make up the face. It is a difficult bone to operate upon, as an operation usually ruins the looks of the face; therefore, any trouble or disease should be carefully and skillfully treated. Physicians seldom think much about, or have much to do with such cases, especially if caused from the teeth, as they leave that part of medical and surgical work for the dental profession.

QUESTIONS.

1. Upon what does good health depend?
2. What are the results of losing the temporary teeth before they are ready to come out of their own accord?
3. What are the results of keeping them in too long after their time to come out?
4. What usually causes an offensive breath?
5. How can a bad breath be overcome?
6. What is the antrum of Highmore? 2. Why should it be very carefully guarded against bad teeth and accidents?
7. What is often a cause for neuralgia?
8. How many muscles attached to the upper jaw bone?
9. How many bones articulate with this bone?
10. What class of bone does it belong to?

CHAPTER IV.

The Mouth

The mouth is the entrance to the stomach and intestines, or the digestive tracts. It is an oval shaped cavity, bounded in front by the lips, upon the sides by the cheeks, behind or posteriorly, by the soft palate and muscles that assist in swallowing. The mouth is lined throughout with a thin membrane called the epithelial membrane, beginning at the lips and continuing throughout the mouth and soft palate. The membrane is a rose pink color when in a healthy condition. The function of this membrane is to line the mouth, also to secrete a fluid that aids other juices in mixing and swallowing the food; also aids in the sense of taste to some extent, as the membrane is supplied with little fine nerve endings that are very sensitive; therefore, the membrane is very useful.

The mouth is supplied with other secretions. From glands on each side of the face and under the tongue. The largest one is the Parotid which is placed below the ear and behind the angle of the lower jaw. This gland weighs from one-half to one ounce. It is well supplied with bloodvessels and nerves, and is of a purple color. It empties its secretions into the mouth through a duct (meaning a little tube) called Stenson's Duct (from the man who discovered it). The duct is about two and one-half inches long and commences by the uniting of very small branches, finally forming the big duct which empties into the mouth opposite the second molar teeth in the upper jaw.

Many times the duct will become closed with what is known as Calculus (commonly called tartar). It is a substance resembling bone; it originates from food stuffs and water, and analy-

sis shows different mineral salts. It is thrown off as a waste product through the saliva which first comes through the glands. Many times the glands cannot throw it off into the duct and on into the saliva, and a great deposit will collect in the gland and form a bony-like tumor, and many times becomes infected and give trouble.

The glands will often throw off the calculus, but the duct will become impaired in some way and not do its work as it should, and the deposits will form a hard mass in the duct, which lessens the flow of saliva, and causes enlargement of the face, with many other troubles if allowed to go on and on. Surgical operations are often resorted to, to remove the tumorous growth. If the glands and ducts do their work properly, the calculus that comes from the saliva is thrown off as a waste and finds its way into the mouth, and commonly finds a lodging place on the teeth, or if crowns or plates are worn, will deposit on them as well. In many cases the deposits on the teeth will accumulate to such an extent that they will be longer than the teeth themselves, and are removed with some difficulty, as it attaches very firmly and is almost as hard and solid as stone. Others less solid can be more easily removed, but if not removed, great harm will result. (More will be said on this subject later.)

The Sub-maxillary glands are situated below the lower jaw bone on each side of the chin. These glands (two in number) are much smaller than the Parotid glands. They weigh two drachms, are about the same color, and secrete less fluid. The fluid from these glands are less viscid than that of the Parotid, and contain less mineral salts. The ducts of these glands are about two inches long and open in the floor of the mouth under the tongue (the ducts are called Wharton's ducts after the man who discovered the glands and ducts). The glands like the Parotid are well supplied with bloodvessels and nerves. The ¹Sub-lingual glands are smaller yet. They are situated under the tongue in the floor of the mouth. They weigh about one

1. Sub-lingual. Sub means under; lingual means tongue; under the tongue. (Latin).

drachm. The ducts are not so long, but outnumber the others, as there are about twenty in all with the two glands. These glands are likewise supplied with bloodvessels and nerves.

Now, these glands are very useful, and should be treated very kindly, for they are tender, easily bruised, and somewhat easily infected through uncleanness and through the blood also. Their function is that of secreting saliva, from which they are generally spoken of as the Salivary glands. The Saliva contains a ferment called ptyalin, which converts or changes starch into sugar, thus helping in the digestion of food before it reaches the stomach; also in the sense of taste, as it assists in breaking up and dissolving solid foods, therefore rendering them more palatable. The Saliva also moistens the lips, tongue and mouth that they will not become dry and hard.

One of the greatest things to be considered in the process of mastication, is that of a thorough chewing of the food in order that the saliva will have a chance to perform its function. Without the saliva we could not swallow, talk or perform any act with the mouth. (Dr. Horace Fletcher first made this a study, and the world owes to him for his teachings.)

The amount of saliva secreted in one day is about two pints. If the food is not properly chewed and mixed with the saliva as it is being masticated, then nature is going to be cheated, the stimulation is lessened, therefore the amount of saliva is lessened; consequently, the food is swallowed unprepared for the stomach, and the process of digestion is left entirely to the thirty-two feet of alimentary canal. You see nature's first step of digestion should occur in the mouth, and food not mixed well with saliva, putrefies and throws off noxious gases.

Most people are human sewers, anyway; they eat hurriedly and swallow with an effort, gulp down soup, soft foods and liquids, and never taste half of what they eat. Thus they carry into their stomach decaying masses of refuse that leave them sick. The real wonder is that they live at all. Then they wonder why they have headache, boils, bad breath, foggy feelings, gout, eczema, etc. They are poisoned, that's why.

The mouth is nothing more than a food chopper, the teeth the grinders, and I daresay *not another organ* of the *body* is *abused* as is the *mouth* and *teeth*. And doesn't *common sense* teach us, that if the teeth or *grinders* are *out of repair*, that the *work of digestion*, and the *methods* that *nature* has *provided* us with that we may live (like your little flowers in the garden) are *cheated*, the *whole system* will have to *pay* the *penalty*.

As long as our *bodies* are *clean* and *free from poison*, we are going to *be healthy*. Therefore, the mouth of all parts of the body should be kept clean and in a healthy state, for bad, decayed teeth and a filthy mouth are responsible in most cases for chronic stomach troubles, and general systemic derangement.

If for no other reason other than a social standpoint, one should take the utmost care of the mouth and teeth, for there is nothing so abhorrent or disagreeable as that of a bad breath, and badly decayed teeth. The sight of such a mouth is enough to make one sick. A bad breath is a signal of danger.

"The breath is poison to begin with," even from a healthy mouth, so what must it be when contaminated with decomposed, decaying foodstuffs, tooth structure, tissues, and all other foreign material that go hand in hand with such conditions. The most serious question is "Why don't people take care of their mouth and teeth?" Why do we take our daily bath? Why do we wash and clean our face and hands many times a day? For cleanliness, of course. Nature demands it, and we form the habit while very young, and feel very uncomfortable when neglected.

Then, my little readers, your mouth and teeth need the bath and scrubbing much worse, for they are brought into contact with far more filth and decaying products than are the face and hands.

There are so many grooves and places between the teeth, and non-cleansing surfaces of the teeth, that foodstuff finds a lodging place, and there remain until removed; if not, then it decays, like your sausage grinder, will clog up and trouble in

many, many ways will take place. One who has bad teeth and a diseased mouth such as we have been telling you of in this chapter, can expect anything to go wrong with their bodies at any time.

QUESTIONS.

1. Name all of the salivary glands and tell where they are situated; what is their function?
2. Why should the ducts of these glands be carefully watched and kept in a healthy state?
3. What is calculus? Learn all you can about it.
4. Why should one masticate the food thoroughly?
5. How much saliva normally secreted in one day?

CHAPTER V.

Bacteria of the Mouth

The mouth is a hot-bed of micro-organisms or Bacteria. Some authors claim to have found from twenty to thirty different kinds of germs or Bacteria in the mouths of healthy persons at the same time, so what must be the number in mouths that are not clean and healthy! What is every mouthful of food swallowed by such a person like?

The air we breathe, especially in poorly ventilated rooms, and in cities that are filthy, also in swampy regions, is full of Bacteria. Most foods we eat are full of them. Therefore, there is little room for escape except by being as clean as we possibly can.

Not all Bacteria are harmful: in fact, some Bacteria are very essential to life. An example would be that of ripening of fruit, cheese, milk, wines, bread yeast, etc.

Though many Bacteria are very poisonous to animal bodies, higher or lower, and many diseases are readily and easily transmitted from one to the other. As an example: Tuberculosis or Consumption can be transmitted from cattle, either from eating the meat, or from the milk from cattle thus infected, to man. Fowls and fish have Tuberculosis, and so do cats, dogs, monkeys, rabbits, or any of the lower animals, for that matter. Through under climatic conditions and the conditions of the air, do the lower animals become extremely susceptible to such diseases. (The same thing holds true with man.) As a rule, the lower animals are less susceptible than man, from the fact that they live in the open air to a greater extent.

Some authorities claim that some Bacteria can be boiled for several minutes or even hours without being killed, while others

are killed at the boiling point of water. Strong antiseptics kill, or prevent the growth of many, until they die of starvation.

Bacteria depend upon heat, moisture and suitable foodstuffs for their growth; some of them require air to live and some do not.

It is said in parts of Mexico, there are no Bacteria. The air is so pure and free from them that meats, or other foods, do not decay.

On mountains fewer Bacteria are to be found than in low lands. They have been found in polar regions where there is ice and snow the year round. So this being the case, and when there are but few things that we can do to keep our bodies free from them, or prohibit their growth as much as is possible, why not at least try to do the things that are easiest and simplest in the reach of each and every one, and that is, *keep clean?*

Bacteria cannot thrive well in clean, healthy places; they die for want of food. Sunlight is one of nature's best remedies, so do not be afraid of sunlight; live in it as much as you can. The X-Ray and Electricity is also destructive to them. Some medicines kill many kinds of Bacteria and others will not. As stated before, the one thing (and the very best at that) that is to be had in the reach of the poorest persons, is *cleanliness, fresh air and sunlight.*

QUESTIONS.

1. How many kinds of bacteria are found in a healthy mouth?
2. What conditions are favorable for their growth?
3. What unfavorable?
4. Are the bacteria all harmful?
5. Do the bacteria all live with air?
6. Under what conditions do they die and cease to multiply?
7. Where do most bacteria live?

CHAPTER VI.

The Temporary Teeth

As there are two sets of teeth in the human mouth during life, we will have you learn about the ¹Temporary teeth. They are called Temporary, because they are lost in childhood. (They are wrongly called milk teeth or baby teeth by many.) There are twenty in number, ten in the lower jaw, and ten in the upper jaw. They begin to ²erupt (the lowers in advance of the uppers from a few weeks to months in some cases) at about the age of five to eight months, and continue in regular order to erupt until the whole set of twenty are in a nice row from one side of the mouth to the other. It usually takes from twenty-four to thirty-six months for the teeth to get through; some cases they are much earlier, others very slow. Poor health and poor food will cause a delay in the eruption of the teeth. Many children suffer but little while the teeth are coming, others suffer great pain; the temperature will be increased, chills, spasms and poor digestion will be experienced.

Children suffer a great deal with their temporary teeth, not only from the eruption of the teeth, but from other troubles that come from bad teeth; earache, headache, troubles with the throat and eyes and ears can nearly always be traced back to bad teeth. This is the temporary teeth, however, a long time perhaps before the permanent ones make their appearance.

A great mistake is made by the parents by thinking because the little teeth are soon to come out, that there is no use to have them taken care of. They are wrong, very wrong, for pray tell me: How can a little child be happy? How can he be healthy? How can he come up to your expectations if he has poor health, and common sense teaches us that with bad, irregular teeth, it is *impossible to have good health*. Then,

mothers, keep the little mouth and teeth as clean as you do the rest of the body; yes, more so, and do it the day the baby comes to the world; keep the mouth clean, and when the teeth make their appearance, keep them clean; make it a daily habit to clean the little teeth, if there is only one, two or three, keep them clean, and if you see little black, ugly places coming in the grooves, take the baby to the dentist (a good one, not a quack) and have the tooth filled; probably the tooth involved will have two, three or four years yet to stay in the mouth, but if decay is left undisturbed for even a few months, there will not be a tooth left but an ugly old snag to be a source of annoyance and a germ breeder, until nature has her way and the permanent tooth comes along and pushes the snag out. They should not decay, but you know filth will decay anything; *let your eyes go for a few months*, don't wash them, just let them *accumulate* every bit of *dirt* and *dust* and *filth* they can hold, and *see* how long it will *be* before *you are blind*.

The regularity of the permanent teeth depend much upon the way the temporary teeth are retained. The early loss of the temporary teeth will cause the permanent ones to come in very irregular, and if the temporary ones are allowed to stay in too long, the permanent ones are just as liable to be irregular, for many times the permanent teeth do not force the temporary ones out as they should, and in place of coming in line where they should, will come in on one side or the other. Thus the temporary teeth are probably decayed and wedged between the other ones coming; you can readily see what will take place in a case like this. The new teeth coming will be exposed to decay from the offending one; the new ones crooked because they can't come in right, possibly infection and an abscess from the decayed, wedged temporary tooth. What are we going to do in a case of this kind? The child is afraid it will hurt to take it out because he has not been taught to care for his own mouth or to have anyone do it for him, so he puts up a "cry," and the par-

1. Abscess, a localized collection of pus formed by infected, decayed tissue.

ents will explode and quarrel about their boy, or "my girl cries all night with the toothache," or "I can't see why my child doesn't grow; he or she is pale, can't eat; doesn't sleep well, and I have to keep them home from school." "I don't see why he is so nervous." Not only are these things to be considered; as before stated, most all these bad teeth are filled with a decayed mass of foods, and frequently abscessed. Then, you see the food is mixed with this decomposed stuff together with pus, which is continually coming from the abscess. This horrid lot of poisons are being gulped down every time you take a mouthful of food, or a drink of anything. Again, think of the small pieces of the broken-down tooth structure that are being swallowed. Think of it, eating your own teeth! You are slowly poisoned on the rotten stuff. Nature has to eliminate it in some manner in order that you don't die instantly, instead of building strong, healthy brains, muscles, bone, etc. Nature is working on repair.

Then why will you abuse your own bodies, your own mouth and teeth, when God has been good enough to you to provide them that you can eat and not have to be fed from a spoon like something helpless? When He has given them to you that you may be beautiful? Is not a person without teeth horrible looking? Why do they hide their face and especially the mouth? Because they know they are hideous. So my little readers, do not abuse your mouth and teeth; keep them clean, and they will carry you through life safely. Do not think more of play, of study, or money or anything, than you do of your own little bodies. It is wrong. Don't do it.

Children, or grown-ups as well, will soon avoid masticating the food on the side of the jaw where an offending tooth is constantly aching. Therefore, the masticating is done on the other side of the mouth, leaving the rest of the teeth practically idle; in this way the food is only half masticated. The teeth not in use are more susceptible to decay than those that are in use, for the reason that they are not self-cleansing and functioning as nature intended them to be.

The mother or nurse should see that the mouth of the baby is thoroughly clean from the time it is a day old; the little mouth and nose should be kept clean by wiping out with a clean, soft cloth dipped into a very mild solution of Boric acid, or even clean, warm water. In this manner of treating the baby, it is kept clean and healthy, and taught to care for itself at the same time, and when the little white teeth begin to come in, have a little soft tooth brush and wash and clean baby's teeth at least once a day. Take the time at night, the last thing before bedtime.

Another good plan for mothers to follow is to take the little folks to a well-known dentist every few months and have him examine the teeth and see that no decay or other troubles are taking place. This will also teach the child not to be afraid, or dread to have the mouth and teeth attended to. A great mistake is made by parents when they do not have the Temporary teeth filled and cared for just the same as that of the permanent teeth. Very little pain or inconvenience is experienced with the operation, if done before the decay has extended very far, or before the pulp of the tooth has been injured. Not only are these things to be considered, but the time and expense as well.

QUESTIONS.

1. Temporary, meaning for a given time.
2. Erupt, to burst forth.
3. Why should the temporary teeth be filled and retained until they are ready to come out of their own accord?
 - . Do all persons have their second set or permanent teeth? No, they do not. Cases are recorded where there was no teeth at all and a few cases where only the temporary teeth came.
5. How does the regularity of the permanent teeth depend on the temporary ones?
9. From a social standpoint, why should the mouth and teeth be kept in
7. Can a person suffering from bad teeth be happy and well?
perfect condition?

CHAPTER VII.

The Permanent Teeth

This set of teeth begin to erupt about the age of six years, and are frequently thought to be the Temporary teeth, and for this reason are thought very little of if decay takes place, as many persons think because the Temporary teeth are to be lost soon, that they don't need caring for. Thus the mischief is done, and I venture to say that nine out of twelve Permanent six-year molar teeth are lost (or so badly broken down that they had as well be out) before the child is ten years old.

These molars come in behind the Temporary molar, four of them in number, and by all means should be taken care of. It is very wrong to allow them to decay and have to be taken out.

This set contains thirty-two teeth in all, sixteen above and sixteen below.

Their names and time of eruption in order of each other, are as follows, beginning with the lowers first, as they are in advance of the upper ones by a few weeks or months. The two central incisors (lower) are spoken of being central, because they are in the center of the arch.

In order then as they erupt, and the number of roots of each tooth:

Two Central Incisors (one root), 6 to 8 years.

Two Lateral Incisors (one root), 7 to 9 years. Upper ones one root, lower one root, normally.

Two Cuspids (one root), 11 to 13 years.

Two First Bicuspid, upper and lower, 9 to 10 years. Upper two roots, lower one root, normally.

Two Second Bicuspid, 10 to 11 years. Upper two roots, lower one root.

Two First Molars (upper three roots), 6 to 7 years.

Two Second Molars (upper three roots), 12 to 14 years.

Two Third Molars (upper three roots, normally), 17 to 30 years. All the lower Molars have two roots, normally, and two to four canals in the roots.

These periods of eruption vary in many cases.

We will tell you why the teeth have the names they do, that perhaps you would like to know how they happen to have the names they do.

The first two then are called Central Incisors, because they are used to bite or incise the food, and central, because as before stated, they are in the center.

The next two are called the Lateral Incisors, because they are on either side of the center, also because they bite and incise.

The Cuspids get their name from having only one cusp. They are called canine by some, which is improper. Animals like the dog and cat have canine teeth; people have cuspids, although they serve for tearing the food the same as the canine do of the dog and cat family. Possibly, that is why they came by the name of canine; anyway, they are cuspid teeth, not canine. Many people call them the eye teeth, which is wrong again. They are situated almost under the eye and have very long roots (only one root to a tooth, however) is why they are called the eye teeth. So, remember, eyes do not have teeth, and only dogs and other such animals have canine teeth.

By some persons the lower cuspids are called Stomach teeth. This name applied is wrong.

The structure of the teeth is somewhat difficult to understand. The outside surface is called Enamel. This covering is very hard, differs in color, according to the temperament of persons; great pressure can be experienced with little or no harm to the Enamel. If kept clean the Enamel is very shiny and has a high polish which gives it the self-cleansing qualities.

The next structure to be found is the Dentine. This part of the tooth is entirely covered with the Enamel. The Dentine is not as hard as the Enamel, but it gives to the Enamel strength

and life. If the Dentine be removed, leaving the Enamel, the Enamel will break away in pieces. The Dentine receives its nourishment through the pulp of the teeth (commonly called the nerve). The Dentine has a space inside filled with a jelly like mass of tissue called pulp. This tissue is supplied with numerous little, white nerves, also arteries and veins. This is the crown of the teeth, that part which is seen and surrounded by gum tissue. The teeth may be divided into three parts,—the crown, neck and roots.

We find the roots are composed of Dentine, a kind of bony tissue, very hard, and well supplied with nerves which extend throughout the entire tooth into the Enamel. These little nerve fibers are so fine that they cannot be seen with the naked eye, the functions of these nerves being so arranged that they carry messages of approaching danger to the pulp of the tooth.

The roots are surrounded with a very thin, firm membrane, which clings very tightly to them, holding them in their sockets, also giving them nourishment. If the membrane is lost through disease or otherwise, the teeth will be lost. The membrane is very well supplied with bloodvessels and nerves. The membrane extends only to the neck of the teeth where the Enamel leaves off.

Toward the end on the root the membrane continues, surrounding the root entirely, ending at the ¹apex. "A heavy blow, or disease, or overwork of this membrane" will often cause the tooth to be so very sore that the jaw cannot be brought together without severe pain. The tooth will appear longer than all the others, and in many cases it is longer, for the inflammation of the membrane will raise the tooth or teeth out of the socket.

The Pulp of the teeth is the only tissue of the body that does not repair itself when injured or diseased. If the Pulp of a tooth be diseased or hurt badly, it will die. It may linger along many months or even years, but will die in time, more often die in a few days or weeks.

1. Apex, the top or pointed extremity of any conic part.

Many times the Dentine will go to work and throw up a wall of strong new Dentine. Where decay is taking place, you see nature is trying to defeat disease, or that which is trying to do harm to her household. As a rule, one will be conscious of a toothache long before the Pulp of the tooth is injured so badly it will die, for remember the nerve fibers send their messages of warning, and also remember the Pulp will die if injured badly.

You can readily see why the Pulp of a tooth will die if very much swelling takes place. Note the small opening which the bloodvessels and nerves enter. There is little or no room for expansion of the tissues, also but very little ¹Lymph is supplied. Thus the Pulp dies of strangulation if from nothing else.

It must be remembered that the Eruption of Permanent set of teeth is about ready to take place, many weeks before the Temporary ones are lost. Many times the Permanent tooth will be seen through the sockets of the lost Temporary ones, and because of the importance of knowing this, I repeat again, that between the age of five and six years (near six) the first four Permanent molars make their appearance before any of the Temporary teeth are lost. These four teeth are thought by many to be the Temporary teeth and will be replaced; therefore, they are neglected until they are so badly decayed they have to be taken out. Again, these molars are usually subjected to more danger than they would be if the Temporary teeth were taken care of until lost, for one decayed tooth will decay two if it comes in contact with them, and very few Temporary molar teeth are lost that are not decayed, for decay will get the best of them if not taken care of and kept clean.

Many of the lower animals are much cleaner than the human family. Decay is more vigorous between the ages of three, four or six to 20 years to that of adult life. This fact proves the necessity of extra care, and the promptest attention to any indication of disease while yet very young.

1. Lymph, a transparent, yellowish fluid found in the lymph glands.

After the fifth year, parents should count their children's teeth occasionally, and when more than five teeth are found on either side of either the lower or upper jaw, they can depend upon it that the last big one belongs to the Second or Permanent set of teeth, and if lost will never be replaced; also if extracted, the whole set of new ones to follow may be very irregular, as the new ones will try to fill the space and crowd and push one, two or more out of line, thus making a vast difference in the shape of the mouth, teeth and face.

The third molars often give considerable trouble in erupting, for in many cases there is little room for them to come in; they may never get through the bone. Again, they cause great pain and distress, fever, constitutional troubles, etc. Cases of this character should be carefully taken care of. The general health may suffer from a bad third molar (wrongly called Wisdom teeth). Until the eruption of the third molar teeth, patients suffering from eye, ear, nose and throat trouble, neuralgia or other deranged conditions not accounted for, would do well to seek the advice and examination of a well-known Dentist.

Such are the conditions in many cases, the whole affair caused from a third molar tooth trying to make its way through the bone.

QUESTIONS.

1. What is the sixth year molar?
2. Where is it found?
3. Does it come in before the temporary teeth are lost? (Yes.)
4. Are they often taken for temporary teeth? (Yes.)
5. If lost, what are the results?
6. How many teeth in this set?
7. When do the first ones come in place?
8. When do the last ones come in place?
9. Name all the teeth in their regular order, and when they erupt.
10. What is the enamel of the teeth?
11. What is dentine—the pulp?
12. What holds the teeth in their sockets?
13. What is the function of the enamel and the dentine?
14. At what age is decay most ravaging in life? Why?
15. At what age may the third molar come in place?
16. Is the third molar teeth of much use? (As a rule they are not, and are usually the direct cause of ear, eye, nose and throat trouble.)

CHAPTER VIII.

Decay of the Teeth and Its Cause

Decay of the teeth is the result of the action and work of micro-organisms.

There are several kinds of Bacteria found in the mouth at any and all times (see chapter on Bacteriology), but only a few are responsible for the decay of the teeth.

First of all, Bacteria cannot build their nests or homes where they are constantly driven out, or disturbed. When never disturbed, and they have plenty of food (which they do if the foods remain on the teeth from meal to meal and never taken off), they multiply in large numbers. What is meant by their "nests or homes," is, they build a strong wall around themselves and live inside,¹ secreting a fluid that dissolves the tooth structure, thus causing decay. They attach their nest so firmly to the tooth structure that the lips or tongue cannot dislodge it; in a groove or pit on the teeth, any place serves the purpose. The favorite place for the little invisible mischiefmakers to do their work is between the teeth, and in deep grooves and pits.

In these places they are quite safe from interference, as the tooth brush cannot get at them, neither can the tongue, lips or muscles of the cheek, and the saliva cannot dissolve it, so they grow and grow. Their foods consist of sugars, starches, some fat, water and air (if they require air, some do not). Also the mouth being warm, they have everything suitable for their growth. Therefore, they do their mischief all unaware to the individual.

As before stated, their secretions are the most harmful. They secrete a kind of acid that dissolves the tooth structure, after they have dissolved enough of the structure they enter

1. Secrete, to throw off or separate.

the tooth itself. They surely do have everything their own way then. So with their secretions, together with their dead bodies (for like people or animals they die, they are a form of low life, remember), and foodstuffs that find lodgment in the decayed tooth and decompose, can you understand why your teeth decay? Why they ache? Why your stomach suffers in its endeavor to throw off these abnormal poisons which you swallow hundreds of times a day? Can you wonder that you have any health at all? Do you see how people survive as well as they do. Think how many people are inmates in all kinds of Hospitals and Institutions for feeble and weak minded, and Insane Hospitals, many cases from bad teeth and mouth alone.

Nature provided the enamel with its density for a protection to the dentine and vitality of the teeth. Therefore, decay makes slow progress in the enamel, but when access is had to the dentine (it having more animal matter, and being much less dense) decay goes on more rapidly. That is why the teeth go so quickly after invasion of the enamel. Many times the teeth will be a mere shell before the person is aware of decay in the teeth. For this same reason, they think decay takes place inside the tooth, but it never does. It always occurs from without. Perhaps only a very small cavity would be visible, with the crown of the tooth two-thirds gone.

Bacteria follow the line of least resistance, for that reason they follow the Dentinal Tubuli (spoken of previously). This explains why the Dentine is again less resistant than the Enamel: there are fewer Tubuli in the Enamel and wider spaces between them. This theory also explains why the tooth will be a mere shell inside, while the Enamel is yet intact.

The Tubuli (as previously stated, see page 29), are filled with fine nerve endings, which send a message of warning in the form of pain to the pulp: the pulp being filled with nerve fibers, send one over the network of nerves to the brain centers. Many times only a few shocks of pain will be felt before the pulp is sufficiently injured to die. Bacteria enter the pulp and

1. Dentinal tubuli, invisible, rod-like tubes, in the dentine, so fine they are only seen through a microscope.

cause it to ¹putrefy. Foul odors and gases will be coming from the parts affected, abscesses will form, and the body in general suffer.

Therefore, frequent examinations by a competent dentist should be made by all means to prevent these conditions from coming about.

When decay has penetrated near enough to the pulp to cause it to die, then an abscess follows, will soon become chronic, is the only reason a person does not lose the whole jaw bone and surrounding tissues involved, or die of blood poisoning outright. But nature does all she can by carrying away these germs, and the decayed matter as waste through the blood and on to the sweat glands, also to the kidneys. At the best, without treatment, the bone will die surrounding a tooth; the roots of the tooth will become honeycombed and be eaten away; the teeth or tooth will turn dark; the gums will become soft, spongy, flabby, red and swollen. They will be sore upon pressure, will bleed very easily. A very foul odor is usually present. Did nature intend we should have conditions like this in her household? No, a thousand times, no!

What kind of health can one expect to have with a mouth in this condition? Not only the mouth is involved, but the breath as well. How many times have each and every one of the readers of this work, sat next to a person just described, in the street car, or at church, and through courtesy could not very well move? And yet how many times have you not turned aside thoroughly disgusted; in fact, sick from coming in contact with the odor, and the vision as well? There is a cause for this. Do you know what it is? It is simply filth and decayed matter, surrounded and harbored by living, human beings. Even the lower animals are more cleanly.

You will understand now why anyone with a mouth like this has indigestion, headache, nervousness; in fact, derangement of the whole system. How can it be otherwise, where every mouthful of food is full of broken teeth, great pieces, and you don't know it? Pus from the abscess; blood from the gums; decayed food from the cavity crowded out by a fresh supply and thou-

1. Putrefy, or decay, means dead tissue, infected with germs.

sands of bacteria of all sizes and shapes. If you could see them under the microscope, you would think a whole menagerie of the worst type were wrangling together in a massive heap.

If the cook were to introduce by accident even one of the things I have just mentioned in a nice hot biscuit or any style of delicious looking cookery, and you find it out, you surely would be very highly insulted. Yet the food may be just as clean as can be, wholesome and good, the minute it is taken into the mouth, it is rendered unclean and filled full of poisons. Why have food inspectors and pure food, when the food is taken into an infected mouth?

The nerves of such individuals are almost threadbare, their health is broken and they are a detriment to those with whom they come in contact. They are miserable in looks and feeling, have no ambition to do things; in fact, they don't care for anything. Why? Because their food chopper is out of repair and the whole body is starving to death for want of pure food and pure air. What is the remedy after the mischief is done?

First of all, keep the mouth clean and such dreadful things won't occur. If they do take place, remove the cause and disease likewise, by having your family dentist make frequent examinations to see that nothing is taking place; if so, have him take charge of the disease. It is always best to consult a dentist, as physicians pay but little attention to such things; they claim that field of the profession belonging to the dentists.

These conditions do not always come from personal neglect. Severe illness in infancy may cause the tooth germ to become stunted. Erosions and abrasions attributed to high fevers, such as scarlet fever, measles, or any of the common diseases where the temperature is very much increased. Even these cases can be overcome to a great extent by constant care and absolute cleanliness, and by beginning in time.

Remember, "procrastination is the thief of time."

QUESTIONS.

1. What is meant by the nests of bacteria?
2. What will prohibit bacteria from building their nests?
3. What do the bacteria require for their living?
4. Where do they build their nests?
5. Why should the grooves and pits of the teeth be so carefully cleaned and watched?
6. Why do the teeth ache?
7. Does decay of the teeth begin on the inside of the tooth? (No, never, always from the outside.)

CHAPTER IX.

Deposits on the Teeth

Many persons have what are called, deposits on their teeth, and if they are not removed, they will eventually cause the loss of the teeth, accompanied by great pain and sorrow.

These deposits come from too much mineral salts in some kinds of foodstuffs. The general system requires a certain amount of these salts for various purposes, such as mending broken bones, old worn-out bones; also as a filter, probably as the minute particles of gritty substance gather many invisible fragments of foreign material, in the round of circulation before it is finally thrown off as a waste product.

The saliva and other secretions of the mouth have a goodly share to deal with. Finally the little granules find themselves in the mouth deposited there by the secretions. Much is wasted, though a per cent will find a lodging place in a rough place on the teeth, and there attach itself and increase little by little, until the strong mass will become as large as the teeth, many times, much larger. Now, what takes place? This is an abnormal condition. Nature didn't intend such to be the case. These deposits are foreign material, and nature abhors foreign substances of any kind. The deposit of these mineral salts cannot always be prevented. But they can, and by all means, ought to be removed. The saliva cannot dislodge it, neither can the tongue or lips; mechanical means then, is the remedy.

These deposits are called tartar by some, and calculus by others. It deposits in a granular like mass; therefore, it is porous, which affords a very good hiding place for bacteria and food. This mass is growing then, all the time, and is a source of constant irritation to the gums, and will cause them to become diseased. They bleed easily and soon recede from the necks

of the teeth, finally leaving the roots bare. Of course, dentine is sensitive, and the changes of hot and cold soon irritate them until the teeth ache; finally this state of affairs goes on until bacteria enter the tissue itself, and soon pus will ooze from around the neck of the teeth at any and all times. This is swallowed as fast as it forms, odors will soon be noticed, bad taste in the mouth. These conditions go on and on for a few months, probably a few years before the bone and tissues give way and the teeth are lost for want of support.

Also small bits of the deposits are broken off in masticating the food and are swallowed, which may act as an irritating poison in some organ, if it be carried so far, and become lodged.

The gums are so tender they cannot be cleaned without pain, therefore, they are neglected.

So my little readers, a person who is like this is never happy. They are sick in some manner, for they never get a mouthful of pure food or water. They are poisoned by these decayed materials.

The stomach is overburdened with its own work, and that of combating these poisons, and soon the intestines and other organs are called on to assist in correcting conditions. This state of affairs continues until the patient is almost a wreck, all the machinery being used up to excess. Strong medicines are then resorted to. Probably some one suggests to the person, "You ought to have a new set of teeth." The patient by this time is willing to do anything. So they in all probability not knowing any better and thinking will begin to look around for help, and to (as they think) save a little money, are induced to try the cheap advertising places, where so-called dentists are supposed to render professional services. These people will tell you, "Have all the old things out, and have new plates." Perhaps many of the teeth could be treated and saved by a conscientious dentist with but little more expense besides rendering better service and saving your own teeth, to probably the loss of them all, and a bad job from the unethical dentist, who does

not care for the welfare of the patient, all they want is the money, and your absence from the office the quickest way.

You should be just as careful in selecting your dentist as you would a physician or surgeon, in whose hands you place your life in severe cases of fevers or operations.

The price of good work is a very small thing to be considered when compared to losing your life, limbs, or teeth. Though first of all, do not let things go as far as this. Begin in time. Prevention is the best cure. Consult the best known dentists, and have your mouth examined every few months, or at least, three times a year. If you find things are going wrong yourself, go at once and have them attended to.

There are two kinds of tartar or calculus. The salivary,¹ found more often and in larger quantities, as the name implies, and comes from the saliva. This calculus is less dense and different in color as a rule to the other kind, which is known as seruminal calculus, which is less in quantity, much harder, and of a dark, ugly, blackish brown color. This calculus is found on the roots of the teeth, and comes from the blood (as the name tells us) (²Serum). This calculus is more difficult to remove than the salivary calculus, for many times it extends to the end of the roots. It will deposit in patches, according to the roughness of the root and the arrangements or order of the ¹capillaries, through which it escapes from the blood. Where there is a deposit, the gums will be swollen, red and probably sloughing, due to infection and irritation; also these deposits press on the nerves causing neuralgia and other nervous troubles. A dark line will be seen through the pink gums near the necks of the teeth. This appearance assists in locating the deposits. Removing this tartar is somewhat painful; time and patience are necessary to perform the operation.

These conditions are serious and indicate other abnormalities in the system somewhere, probably the kidneys, liver, bladder,

1. Salivary.

2. Capillaries, small blood vessels.

or a complication of diseases. One thus affected should have the care of a physician and dentist together. Many times the deposits will have to be removed often in order to save the teeth.

The salivary calculus. Quite a bit has been said on this kind of deposit. But will add the fact that this calculus will form on crown and bridge work, and plates as well, being a source of irritation to the surrounding tissues.

As stated previously, the calculus many times lodges in the ducts leading from the glands, forming a kind of tumor or a lump of stony mass with probably projections growing in directions toward the lines of least resistance.

Bacterium find their way into this mass and cause chronic abscessed conditions. These conditions do not always occur, but they are more than likely to. An operation for the removal of a mass just described, is very easily and successfully done.

QUESTION.

1. What is the result of allowing deposits of calculus to form on the teeth?
2. Will it finally cause loosening and loss of the teeth? (Yes, in 99 per cent of cases.)
3. How many kinds of calculus found in the mouth, and other systemic secretions?
4. Is there danger in the glands and ducts becoming afflicted from calculus? (Yes.)

CHAPTER X.

Regulating Malarticulated Teeth

What do we mean by ¹Mal formed teeth? In this case it means the teeth do not come together normally; that they are not in the right position.

Many persons believe that in attempting to regulate the teeth that they will break, or other harm come to them. This is not the case under skillful management and care, both upon the part of the operator and patient. There are many reasons "*why*" the teeth should be regulated. Health, comfort and appearance are important ones. The causes are many: Inheritance, habit, accidents, too early loss of the temporary teeth and too long retention of the temporary teeth.

The great harm comes from the teeth not performing their proper function; some do the work for those that are out of line, therefore, they are not as self-cleansing as nature intended they should be and they are more susceptible to decay and other diseases. Another important factor is that mastication is badly impaired. The food is not chewed and mixed as it should be, but swallowed in lumps, and the saliva cannot do its proper work. Bad health is generally the result, again throwing double work on the stomach.

The teeth being out of line,² facial expression is changed. The mouth and teeth will attract a great deal of attention and comment, which is very embarrassing. Bad teeth, as to arrangements or decay, mar the features and looks of many persons who otherwise are handsome in appearance.

1. Mal-formed, badly formed; abnormal.

2. Facial, pertaining to the face.

When the teeth are out of line only a few cusps touch each other here and there in the whole set of teeth and leave great spaces between them. The act of properly masticating the food is impossible, for the grinding surfaces of the teeth do not come together. How, then, can the food be mixed and chewed in a fine mass ready for the stomach? It is impossible.

The teeth should be regulated after the temporary ones are all lost, and the permanent ones (except the third molars) have erupted. From the twelfth to the fifteenth year is the right age to begin the operation; some authors claim much younger in age is a better time. It is wise to begin early, in most cases, according to the extent of the operation. At this age the bones are growing and are less resistant and better results are obtained in every way.

The appliances for regulating the teeth are simple. Some cases yield more readily than others and the operation will be completed in a few weeks, while others are stubborn and will require perhaps months to complete. After the teeth are all in line, they are held in this position until the bone has grown around them sufficiently to hold them in this position; otherwise they go back to their irregular state.

The appliances are annoying to the patient at first and are difficult to keep clean and sanitary, though with care and patience upon the part of the patient and operator, very little irritation or inflammation will take place.

Sometimes the operation is a long, tiresome one, as the appliances are difficult to retain. They work loose and cause annoyance. Many dentists refuse to do this work on account of the time and inconvenience, although at this date we have good ones who are making this part of the profession a specialty, and at, no matter what cost, trouble, pain or time. It is surely worth it all and many times more to have the operation done rather than go through life in such an abnormal condition. The whole thing is a small item compared with a mouthful of badly arranged teeth. Not only does the health in general depend

upon correctly placed teeth, but the voice and facial expression as well. The tongue will get twisted around in any position other than normal, so will the cheeks and lips fall in between the spaces; the person will be biting them and cause them to be sore, when if the teeth were all in line and occluded properly, these conditions would not be.

(See chapter on habit, relative to the irregularity of the teeth, from that standpoint.)

QUESTIONS.

1. Should irregular teeth be regulated? Why?
2. Do the teeth perform their proper function when irregular? (No, they **do not**.)
3. Do these conditions impair the digestive tract? (Yes, in time.)

CHAPTER XI.

Extracting the Teeth

To extract permanent teeth that can be treated, filled and saved, is wrong; it is criminal. As previously stated, if one tooth be missing, we are crippled in nature's eyes, and our bodies have to pay the price by pain and suffering. Only a few exceptions warrant the extraction of the teeth, and these exceptions are: The Third molars that are giving much trouble in eruption; where they are crowding the other teeth so badly that they are becoming irregular; where they are ¹impacted in the bone and cannot erupt.

In a few cases extracting may be resorted to where the teeth are in bunches and so irregular that to make room for regulating it is best to get rid of them. But ordinary extracting because they ache, or a cavity is coming in them, or had a filling in it and came out, is absolutely wrong. Every one of the teeth are worth thousands of dollars to the stomach; and another thing, one tooth depends upon the other; remove one, it puts four or more out of working order, then they begin to get longer and soon become diseased. Leave them in and have them treated and filled. For after the permanent set of teeth are gone you can have substitutes, but never your own teeth, and no matter how skillful the operation, they are never like the original ones.

Of course after they are too badly diseased they have to be extracted, and the temporary teeth as exceptions ought to be removed if for some reason they do not loosen and come away of their own accord or become wedged and cannot get away, though, ordinarily they should become loose and be lifted out like little white pearls with but little pain.

1. Impacted, driven farther in, closely lodged.

The temporary ones should not decay, though they do from neglect and ignorance, and they ought to be filled and taken care of as though they were the permanent ones; for sometimes nature has been defeated some time during the early life of the little child and no tooth germs are formed if they are destroyed by fevers or some cause, and they never have permanent teeth. So if the little ones are lost and decayed you know what the results are, no teeth.

If the temporary teeth are decaying and have only a few weeks or even days to stay in the mouth, they should be cleaned out and filled, simply to keep the little patient from swallowing decomposed food that lodges in the cavities and is forced out from time to time by a new supply; also to prevent swallowing broken tooth structure that in some way might penetrate a blood vessel or a nerve or any organ. Who knows what harm a small, sharp piece of infected tooth structure swallowed with the food can do? Do not have good teeth taken out, they were given to you for use, same as your eyes, ears, hands and feet, and in fact your whole body. You need them all, or nature would not have been so kind and generous in her supply to your welfare.

QUESTIONS.

1. Is it right to extract teeth that could be saved if properly taken care of?
2. What are the many results of extracting teeth?
3. Is a person normal physically after the teeth are extracted? (No.)
4. What teeth as exceptions is it advisable to have extracted?
5. Do all people have teeth grow in the mouth?
6. What might be a cause for their lack of development? (Fevers early in life, and lack of nutrition.)
7. Should the temporary teeth be filled if allowed to decay? (Yes, by all means.) Name a few of the most important reasons.
8. Would you like to swallow a piece of broken tooth structure if you knew it?

CHAPTER XII.

Old Fashioned Way of Thinking

Many persons of today think and believe that because their ancestors did not have a great deal of dental work in their mouths or did not use a tooth brush, and "yes" they lived to be eighty-six or ninety years old, that we people of today don't require the necessary treatment.

Possibly they didn't need so much attention then as now in some cases; others probably more. Some of those dear old, old folks, long since gone to the great beyond, probably had a breath that would make a dog sick. If they did ache, have them taken out, yes pull them out, the only remedy is cold steel. So the sufferer would get on a horse and ride twenty or thirty miles to the nearest town to the physician, who kept an old rusty pair of forceps (used them probably for years and never sterilized them). If the doctor was out of town the barber or blacksmith did the work. Imagine a barber extracting your teeth!

Those are days of history now, and things in every particular have changed. Now, why didn't those people have their teeth taken care of? Why were they not filled and crowned according to the need of the situation?

Dental services were almost an unheard of thing, and but few colleges taught the science.

The first dental college in America was founded in Baltimore in 1840. Very few men thought enough of the profession to take it up, and until late years women were not allowed to enter the colleges, therefore the profession was very much neglected.

And again, as previously stated, the methods of living and food eaten were very different to that of today, and the teeth

probably did not decay so badly for that reason owing to their self-cleaning properties from the use of the teeth in order to masticate the coarse, rough food. The foods were more natural, instead of so much high flavoring and artificial methods of preparing.

Again, their manner of living. The rude open air houses, the manner of dress; in fact, in every respect the old ancestors were more as nature intended; their constitutions were far superior to the Americans of today, and as a result there was not so much demand for dental services as there is at present.

Many physicians will not treat a patient who is suffering from decayed, unsanitary teeth. They will give the patients instructions to go to the dentist and have the mouth cared for before they give treatments, and they are right; no use to give treatment until the cause is removed.

QUESTIONS.

1. What was probably the main reasons for little decay in the teeth years ago?
2. Will an unsanitary mouth impair the health?

CHAPTER XIII.

A Talk on Foods

So many of the foods that are now consumed by the people are so prepared that there is very little mastication required ere being swallowed. Therefore, the teeth are deprived of the self-cleansing and polishing properties which proper mastication gives them.

No work is done, but a ¹residue of food is left in the grooves between and around the necks of the teeth. The food merely glides over the teeth and between them, and a goodly portion remains on them. It does not leave a smooth, well-polished surface; coarser foods tend to polish and leave less residue on the teeth. Where there are smooth, well-polished surfaces bacteria cannot cling long enough to build their nests.

Such foods as the prepared ²cereals have sugar and starch, which afford a very good media for bacteria; so do pastries and wheat bread flour. Corn bread is not used enough for the nourishment, as well as the coarseness that it and other equally as coarse foods benefit the teeth by compelling them to do more work and by not leaving as much residue, and clinging so tightly that only mechanical means will be required to remove the parts that remain.

The lower animals, especially the wild animals, rarely have decay in their teeth, though the domesticated ones have some decay, such as the horse, cats, dogs, sheep, etc. The squirrel, fox, wolf and other wild animals that live on nuts, herbs and meats rarely have ³carious teeth.

1. Residue, remains of accumulated mass.

2. Cereals, foods made from grain.

3. Carious, means decayed condition?

Take a pet dog or cat and feed it pie, cake, candies, sugar and other foods that it can gulp down without chewing, and in a very short time it will have decay in the teeth, the teeth will ache and soon break down, causing the animal much pain and distress. This is one of the many reasons why pets of the household soon get sick and die.

The best we can do to aid nature is to eat coarse, well cooked food, ripe fruit, plenty of fresh vegetables and milk, and have all the pure air and outdoor exercise we can get, and above all things *keep clean*. Nature is our best physician, and when we disobey her laws our bodies will suffer. Cleanliness is purity. Purity is everything.

I hope my little readers will always remember these things and make note of every one whom you see abusing these things of which I have just told you, and note the one who abides by the common, simple methods and see which is healthy, happy and successful, the obedient or disobedient.

QUESTIONS.

1. Do people eat rightly? Do they chew their food properly?
2. Do wild animals have much decay in their teeth? Why not?
3. What should be our first motto toward good health? (Cleanliness, always.)

CHAPTER XIV.

Tuberculosis or Consumption

No doubt the awful, dread disease Tuberculosis or Consumption is assisted by neglect of the mouth and teeth.

They provide a harboring place for the Tubercular germs, and as you have been taught in previous chapters that broken down, decayed teeth and dirty mouth lower the general vitality of the patient, and nature is busy enough attempting to restore normal condition, so her supply of treatment is so limited that Mr. Tubercular Bacillus is not overcome and driven out when they get a chance to locate. Little or nothing can be done for the person so affected. The Bacilli multiply in great numbers very rapidly, and with a lowered vitality little or nothing can be done, when if the teeth were in perfect condition, the digestion good, with plenty of fresh air coming in contact with the germs they would have favorable chances for recovery.

The lower animals, such as cattle, sheep, cats, rats and others are subject to Tuberculosis. Also fowls and fish have the disease. Children should not play with animals that are sick, for Tuberculosis, Diphtheria and almost all diseases are transmissible from animals to man, also from dairy products.

Tuberculosis is called the great white plague, and Pyorrhoec Alveolaris, disease of the gums and teeth, may be called the second white plague, because it is one of the undermining causes of the first, about 95 per cent of adult people lose their teeth from this disease.

QUESTIONS.

1. What part does the decay in teeth play in tuberculosis?
2. How long may germs be harbored in badly decayed teeth?
3. Do the lower animals have this disease?
4. Should children play with infected animals?
5. Can cats, rats, flies and other insects carry infective germs?
6. Should people expectorate in street cars, elevators or any public place? Why?
7. How will the germs scatter and find suitable growing places?

CHAPTER XV.

Uses of the Teeth

The function of the teeth, both permanent and temporary, are to masticate the food, for beauty and contour of the face, and if one tooth be missing (other than from necessary cause) the mouth is in an abnormal condition. The lines and expression of the face will be changed, for nature will endeavor to fill in the space by crowding the remaining teeth in the direction of the space, and in so doing the teeth remaining will be forced out of normal position.

The teeth are very hard and can withstand many pounds of pressure; and again they are a support to the bone in which they are set, to such an extent that after they are gone the bone recedes. Of course the jaws or lips fall in the hollow and the voice and speech are impaired. The tongue cannot be controlled so well, as swallowing the food is not so voluntary.

The teeth vary in color, according to the age, temperament and complexion of the person. They are not capable of withstanding extreme heat or cold, which may cause the pulps to die from shock; also the enamel will crack. For these reasons the food should be of a mild temperature when taken into the mouth.

QUESTIONS.

1. What is the function of the teeth?
2. Will the facial expression change if the teeth are lost?
3. What about the speech, and voice, through loss of the teeth?
4. Will the teeth last a lifetime if properly taken care of? (Yes.)
5. How many years has it been generally known the teeth would last throughout life? (Only a few years, because dental science has been held back and little thought paid the teeth and mouth because they didn't know, and the profession is a new one.)

CHAPTER XVI.

Hygiene of the Mouth

Hygiene is the science of health and its preservation.

There are many hygienic methods and agents introduced and tested with successes and failures alike. But I daresay the most certain method is that of absolute cleanliness. "Keep the body clean and sanitary." For nature abhors foreign, unclean material in her workshop, and we are healthy with rosy cheeks and happy faces as long as our bodies are free from these things that go to make up bodily ailments and disease. Now, since these horrid conditions are brought about by filth and germs why not fight them, why not guard against coming in contact with them?

Many germs are very poisonous. I will name a few diseases that are all caused by different Bacteria; no two of them are alike, though they closely resemble each other in some cases: Pneumonia, Typhoid fever, Malaria, Diphtheria, Smallpox, Measles, Scarlet Fever and hundreds and hundreds of others that we won't mention here. You may come in contact with any of these germs at any time. You may shake hands or drink after some one who is just recovering from any disease. You get the germ on you, finally into your mouth, for if no other way you will bite your finger nails and put them in the mouth in that manner. They are carried around by insects like flies, mosquitoes, bedbugs and fleas, and are carried by water from one place to another, and from dust. Dust is full of them, especially Tuberculosis and Tetanus (or lock-jaw); anyway, you manage to get a mouthful, and those that are not destroyed find a hiding place in decayed teeth; here they thrive and multiply, and finally they are forced out by a fresh supply, and you become infected; prob-

ably they stay in these teeth for weeks and months ere they are forced out. Finally you come down with Typhoid or Tuberculosis or any kind of disease for that matter; perhaps two or three diseases at once, and will wonder where you got them, when probably you have been harboring the germs for months. Then why not prevent their growth and destroy their hiding places instead of trying so seriously to get rid of them and their effects after our system is so full of them that we die of their poisons?

Many Bacteria are very resistant to heat or cold, and it takes a very strong antiseptic to even prevent their growth, much less destroy them. Then how are we going to destroy them after they get into the system? We can't boil them nor freeze them to death, and medicines strong enough to kill them would kill us outright. All that can be done is to let nature's drug store do her work, and in our poor, humble way assist all we can and know how to. If nature is strong enough to overcome them she wins; if not, we die.

Sunlight is fatal to them, so is the X-ray. But they cannot always be exposed to either. Simple ways of living, with plenty of pure air, pure food, absolute cleanliness of the mouth and teeth, and no decayed teeth, with plenty of rest and sleep is the better remedy. Prevention is better than all the remedies for cure. Try it.

QUESTIONS.

1. Where do bacteria find lodging places and build their nests?
2. How do they get from one place to another?
3. Name some of the most common disease germs and how they may be prevented from migrating.
4. Should persons expectorate upon the streets?
5. Is spitting on the streets and public places a means of spreading disease through dust and dirt blown about?
6. Why have food inspectors and pure food laws and put pure, clean food into a dirty, filthy, infected mouth?
7. How is the food prepared for the stomach?

CHAPTER XVII.

Daily Care of the Mouth

We have said "The best and safest road to health and beauty and happiness, is that of absolute cleanliness," and how are we going to know these things if we are not taught in the proper manner?

Our mouth then is the vestibule to the stomach through which the food is mixed and prepared. If the food is contaminated with hundreds of Bacteria and their secretions, pus, broken tooth structure, decomposed foodstuffs and all other foreign material that may find its way to the mouth. This condition is met with by 99 per cent of the people. Then are they clean? No, no.

Well, then, what are we to do? Keep clean, and to keep clean means that you must use the tooth brush in your mouth two or three times a day, at least once. Use a good perforated tooth brush, brushing the teeth with a rotary motion over the back teeth, reaching up and down over the gums of the mouth as far as is permissible in order to clean the necks of the teeth. The front teeth are easily reached and are less difficult to clean. Always keep the brush in a clean place. The mouth is nothing more than a packing house at the best, for carbon-dioxide from the lungs is coming through it at all times: foul odors from different sources, such as dust, smoke, soot, etc.: in fact the mouth is a catch-all, and when these things are allowed to remain, a bad state of affairs is ours. Mr. Bacterium builds his home and remains to do his mischief. Foods ferment and create odors, and everything else is mixed in, and over night means from eight, nine and ten hours for them to do their work if not driven out, so they should be cleared away and stirred about to keep them on the move and tear up their nests. The use of the tooth brush with a good tooth paste is as good a thing as can be

done, for Bacteria soon die of starvation in clean, healthy places and where they cannot get a foothold.

They are more or less disturbed through the day by mastication, drinking, talking, etc. But at night time they have a long time to work (as stated before), and on clean, well-polished surfaces they have little chance to build their nests.

Now, since cleanliness is to be our motto we will put to use that which we are endeavoring to understand and practice what we preach. The motto is "Keep the mouth and teeth clean," and the way to do this is to get the habit while yet very young of using the tooth brush with some good antiseptic tooth paste that will assist in purifying and sweetening the mouth and breath.

In the early morning, before a mouthful of food or liquid is taken into the mouth, the mouth should be rinsed with clean warm water with a little Boracic Acid added as a cleanser and to give a more pleasant taste if so desired. This will clear the mouth of stagnated mucous and leave the mouth cool and clean. Then after the morning meal, if little time can be devoted to the toilet, even a thorough rinsing with warm water again will greatly aid in the removal of food left on the teeth. Though the busiest person can always find time to brush the teeth if they will make up their mind to do so. The whole operation will take from three to five minutes' time, or about fifteen minutes per day or one hour and five minutes per week.

The most important of these daily operations is after the last meal of the day, before retiring. This one should be performed by all means, for if not the little invisible mischief makers have many hours all undisturbed in which to do their work. While you are asleep and resting they are busy, busy.

The little time and trouble spent thus daily will perhaps save many hours of pain and sorrow; will save long painful operations in the dentist's chair, aside from the probable loss and harm from neglect that can never be regained, and you are happy and so are your associates because you are not complain-

ing and miserable with aching, ugly teeth. Your breath is sweet and wholesome; your personal appearance is better; your success in any sphere of life is more sure, because you are clean. So isn't it worth while to spend fifteen minutes a day at war with Bacteria by the simple use of the tooth brush?

So you see you have fought three battles in one day against the enemy. The tooth brush with vigorous use is the general in command of the army, the tooth paste the soldiers. War is declared, and war goes on with three battles each day, 21 battles a week or 1095 in one year. Now, these armies cannot be stopped; they must continue or the enemy will win. Through patience and continuous fighting we win the battle; good teeth, good health and beauty, the victory. The general in command of the army will soon fag out and a new one put in recruit. It will only cost a few cents to get one, so don't cost much. Also the soldiers give out, but don't take long to get new ones.

QUESTIONS.

1. Will food left on the teeth ferment, and give trouble? (Yes, in a few hours.)
2. Where do the bacteria build their homes? Can they live in **clean**, well scrubbed places where they are kept continually on the move and disturbed?
3. Will brushing and rinsing the mouth and teeth keep bacteria from **getting a foot hold**?

CHAPTER XVIII.

How to Use the Tooth Brush

There is quite an art in the ¹manipulation of the tooth brush, and very few persons know how to use one properly.

There is always a right and a wrong way of doing things, and if one is not taught the right way, the wrong one is usually the one followed.

The right way to use a tooth brush is a rotary movement over the posterior teeth, reaching high and low enough over the necks of the teeth to thoroughly clean the necks of the teeth at the margin of the gums, at the same time insuring firmness and cleanliness to the gum tissue by the friction of the brush. Follow the rotary movement and not so much of the old scrub brush style, the back and forth manner. In the rotary movement the particles of food are more readily removed from between and around the necks of the teeth.

Do not use the same tooth brush too long, as all brushes are more or less contaminated with Bacteria.

Tooth brushes are plentiful, and one need not keep them until they are threadbare ere they have a new one.

Never use a stiff, coarse brush, neither one that is too soft, a medium one in texture is better, so be careful in selecting tooth brushes.

Every member of the family should have their own tooth brush, and each brush kept in its own holder in a clean and convenient place when not in use. Do not let another person use your tooth brush under any circumstances (the person in question may have a clean face and hands, clothing neat and a healthy mouth apparently, yet be very much infected with some kind

1. Manipulation, skillful or dexterous treatment by the hand.

of germs or disease that would take many weeks, months or even years to get rid of, and may cost a life; there is no way to know, yet it happens).

When traveling on trains, steamships or otherwise, large quantities of dust and smoke are floating in the air, also is this dust filled with different Bacteria, and may find a lodging place on your tooth brush, drinking cup or fingers.

Never under any circumstances use a tooth brush before it is sterilized if there has been any chance for contamination.

QUESTION.

1. What is the right way to use the tooth brush?

CHAPTER XIX.

Sterilization of the Tooth Brush

Very few know or realize the value of sterilizing the tooth brush and the retainer as well.

When the tooth brush is taken from the mouth it is moist, filled with foodstuffs, saliva, tooth paste, Bacteria and other products. This is always the case, worse at times, and a mere dipping in water of any kind, hot or cold, will not change it and make it sterilized.

Antiseptics will do away with a small per cent of the surface material, leaving that in the middle of the brush unharmed. The best way to sterilize tooth brushes and their retainer is boiling in clean water, keeping the brush well under water; however, some claim boiling spoils the brush, possibly with the majority of brushes, and many authorities claim that leaving the brush in an antiseptic solution like Boracic Acid, Listerine, etc.

If these things are not done for the extirpation of Bacteria, Bacteria will stay on the brush and be placed in the retainer, where they will live and multiply. Thus the germs are put back into the mouth again. So best keep the brush in a solution of Boracic Acid all the time. This will also prevent stiffness of the bristles. Another way to preserve the tooth brush from contamination is an airtight tube made of glass, the brush always being cleansed before putting in the tube; perhaps boil brush and tube together.

Again, the teeth cannot be thoroughly cleaned with the tooth brush and paste alone, for there are many places the brush can not reach between the teeth and in grooves. In a case of this kind a tooth pick serves for dislodging of material, care being taken in selecting soft wood that will not leave slivers if it

breaks. Better still is a pick made from a quill. Soft wood or quill picks will not injure the teeth or gums.

Such things as needles, pins, finger nails run between the teeth, crochet hooks, knife blades or any of the common little instruments should not be put into the mouth. They are liable to break and wound the gums by slipping, or a pin or needle may be swallowed.

The regular dental floss, is the best thing for removing particles from between the teeth, care being used not to force the floss between the teeth with a jerk, thus causing an injury to the tissues.

Always be careful not to make an open wound in the mouth, for many Bacteria do no harm until they have a chance to enter the blood, where they have a chance in open wounds.

(You see what great things come from little things unthought of until harm has been done. Big live oaks come from little acorns.)

QUESTIONS.

1. How best sterilize a tooth brush?
2. Should one be more careful to sterilize brushes and combs after fevers, colds and other diseases? (Yes, to prevent re-infection.)
3. Aside from brushing the teeth and gums and massage of the soft tissues, what is a good way to remove food stuff from grooves and between the teeth?
4. Should one use metallic instruments picking the teeth? What are some of the reasons for not doing so?

CHAPTER XX.

The Gums

In health the gums are a firm rose pink tissue surrounding all of the teeth in beautiful festooned curves and contour, giving grace and beauty to the mouth, protection, vitality and support to the teeth.

The gums blend with the muscles of the mouth, tonsils and hard palate, both upper and lower jaw. They are very firm and hard, permitting them to withstand many pounds of pressure. They have very few large blood vessels and nerves. The gums are not so susceptible to disease as may be supposed; they resist irritation, but will recede quickly when highly irritated and become stubborn to treatment, many times do not restore to normal condition after they are well. After the extraction of the teeth the gum tissue recedes, as does the bone; they go together, thus leaving space for which the cheeks and tongue fall in the place where the teeth and gums once were.

The gums are covered with a thin membrane like that of the mouth in general. This membrane secretes a kind of watery fluid. This fluid assists the saliva in mixing the food. Therefore the gums should be kept free from irritation and disease, for if they are diseased the secretion will be less, and they will be soft and flabby, bleed easily and be very painful, and if these conditions are allowed to continue the teeth will become loose and fall out, and the pulps in the teeth will die.

The gums and surrounding tissues are more liable to have tumors, cancer, canker sore. Many small children have sore mouths from dirty, filthy milk bottles. These conditions are the main cause for many chronic ailments in infants, making them pale, thin and the growth stopped for months. They are

very fretful and many of them die for the want of pure food to build up the little bodies.

Older persons are subject to many kinds of disease of the gums, according to the nature and extent of the irritation. There are many cases where the gums will begin to grow until they will be the shape of a blackberry and have the same seedy appearance. In many cases the growth will get to be the size of a small bird's egg. These cases should have immediate attention, for they are full of micro-organisms and are liable to cause any kind of a disease.

Many men have cancer of the lips from smoking a pipe. The stem of the pipe will cause severe irritation until cancer sets in. They rarely recover.

The gums, then, should be washed clean, massaged well, and if an infection takes place from some cause do not delay the best treatment to restore them to normal conditions.

QUESTIONS.

1. Should the gums bleed? (No, no more than any other muscle or part of the body.)
2. What causes them to bleed, and will they recover their normal condition without removing the cause? (No, they will not, and go from bad to worse.)
3. What is the function of the gums?
4. What will cause cancers and tumors in the mouth?
5. Will a healthy gum tissue bleed, without an abrasion? (No.)

CHAPTER XXI.

The Tongue

The tongue is one of the organs of taste, and assists the voice and speech, also the mastication of the food.

It is covered with mucous membrane, papilla or taste buds, and is very sensitive to touch, being well supplied with blood vessels and nerves. Its base is connected with the Hyoid bone, Pharynx and muscles of the lower jaw. It is of rose pink color and is made up of many muscles.

The tips and middle portion of the tongue are free in the mouth and can be moved at will. Many small glands are also found which secrete a fluid not unlike saliva, called mucous. About eight nerves supply the tongue.

Broken, jagged, decayed teeth will cut and tear the tongue and cause it to become sore and diseased. Mastication will be impaired; so will the speech, for the tongue is in an abnormal condition. Therefore it should be kept clean and healthy, otherwise it may become so diseased as to cause the death of a person so infected.

QUESTION

1. Will broken, jagged teeth injure the tongue? (Yes, probably for life.)

CHAPTER XXII.

The Voice and Speech

The voice and speech will be greatly impaired by badly broken, decayed teeth and by the absence of the teeth as well, as the tongue depends much upon the teeth for the articulation of many words and letters.

A clean, healthy mouth and teeth are associated with the most brilliant successful men and women in all walks of life, especially orators, singers and teachers.

If they were not clean and healthy they would not last many years or even months with the extra work and uses the throat and vocal cords have to undergo in their work.

QUESTIONS.

1. Will the voice and speech be impaired with the loss of the teeth?
2. Do men and women who reach the highest sphere in life, and who achieve the greatest of success, have good teeth or poor, infected ones? Watch and pay attention to the successful ones, the ones you would like to be like when you grow up, and see for yourself.

CHAPTER XXIII.

Hereditary Characteristics

By the term hereditary is meant that one can or do inherit disease or the results of disease and peculiarities to a normal condition from the older ancestors, the parents, grandparents and even farther back. This does not mean that it is the disease itself, but results of the disease, weaknesses in many forms.

Other hereditary characteristics are those of large and small features; say the father was a large, strongly built man, whereas the mother was a delicate woman; in this case the children oft-times would inherit one large jaw and teeth in proportion, whereas probably the other jaw would be like the mother's, small and not to be compared with the other one.

Inheritance as to peculiar shapes or arrangements of the teeth and other features of the face are often handed down from several generations.

QUESTION.

1. Do statistics show that many boys and girls are criminally inclined, with poor teeth? (Yes, many cases are on juvenile record.)
2. Is insanity often attributed to bad teeth and an unhealthy mouth? (Yes, and many states are providing treatment, in the hospitals, with great success.

CHAPTER XXIV.

Habit and Its Results

“Habit.” What does it mean? It means ruin or salvation to the majority of people. Few persons stop to think about it once in a lifetime.

We ask ourselves this question, “Why don’t they think about what habits may do for them?” The reason is because they have not been taught any better, and how are we going to do that which is for good and best when we don’t know?

Habits are formed while we are yet very young, and here the mischief is done, in many cases all unknown to any one. Habit as to malformed teeth and ill-shaped faces, is the next step to that of uncleanness and bacteria, in the way of harm. Many young mothers, and older ones as well, think if the baby sucks its thumb or fingers, no harm will result. It is only perfectly natural for baby to put fist and fingers (in fact, everything in its reach) in the mouth. The thumb sucking will in a few days become a habit, and not knowing what else to do, baby sucks the thumbs until they are nearly blistered, and the ignorant mother is glad of it, for baby is quiet. Right here, learn that it is very wrong for a baby to suck its fingers (some even suck the lips and tongue) for great harm is surely to come from the habit, such as irregular, ugly teeth, for constant pressure forces the bone out of its natural position, and often forces them apart or prevents them from uniting. The most common results are the protruding teeth of the upper jaw, causing the whole face and mouth to be very badly deformed; the nose will not be the right shape; the speech and voice will not be the same.

Not only the face, mouth and teeth suffer, but the thumbs and fingers that are being so misused, as well. The bone in the fingers used will become smaller and flattened; will have a

dwindled looking appearance, many times look as though blistered by heat. The fingers will never be the size they should be.

Also, children with this habit rarely break themselves (especially at night time) until they are grown up, and quit it because it is a necessity to their comfort. Then it is too late, for the mischief is already done; and to their sorrow throughout life they are, in that respect, a cripple, both hands and mouth. It surely is a crime brought about in a peculiar way through ignorance on the part of the parents.

This being the case, stop the habit, prevent it! Take the little chubby fingers from the mouth; and note how soon the little one will know it is wrong and will take them away from the mouth when some one enters the nursery. They soon learn better, and by all means, do not let them have a substitute. Babies require amusement as well as grown-up persons; then give them something they cannot put in the mouth. The gums are sore and annoying at about six months old from the teeth, and at this time they want to bite on everything that comes along.

If, after the habit of sucking the fingers is begun, and persistent removing the fingers from the mouth does not suffice to break the habit, a good plan is to tie little muslin glove slips without fingers over the hands at night; sew the strings on tightly so they cannot break, and tie securely over the hands. After a few, good cries, etc., they will go to slumberland and forget it. Keep the little slips clean, never use soiled ones. If the little gloves do not give results, another good suggestion is that of night dresses without sleeves, also buttoned at the feet to prevent getting out that way. Usually these things are all that is required to stop the habit. Never use strong medicines or pepper on the hands, as the patient is likely to rub the eyes, and in this way severely injure them.

Sucking the lips and tongue is a habit indulged in by many adults as well as children. Little or no thought as to the results are given by the people in general. But nevertheless, the facial expression will change, the muscles will become lax from con-

stant action, for they require rest the same as the remainder of the body. The lips will become scaly like in appearance, bleed easily, and soon become enlarged and infected; last results are abnormal growths, cancers, tumors, etc., for we have two conditions favorable to germ life; open wounds, and constant pressure and irritation. Though small and inconsiderate in the beginning, stop it ere they culminate into serious conditions.

Gum chewing is another habit that really ought to be abolished. This is practiced by thousands.

A few of the many bad results from chewing gum:

First. Facial expression is very much changed, the muscles overworked.

Second. Wear on the teeth from excessive functioning, and from gritty, impure substances in the manufacturing of the gum.

Third. Excessive flow of saliva due to over stimulation, thus the supply is less at the time of masticating of foods.

Fourth. Shows lack of culture and refinement. Probability of swallowing the wad of gum.

Fifth. Accidentally, danger of it lodging in the throat and necessitating an operation, probably at the cost of life; also is indigestible if taken into the stomach, and is likely to cause death, as it does not always get through the alimentary canal.

Digestive ailments are most always associated with a habitual gum chewer; also the muscles wear out. The body throughout is like that of a piece of machinery, it will wear out.

There is great danger of infection in chewing gum, because it is a cheap product and is put up and packed by a low class of dirty, sickly people in factories, that are likely to be very filthy.

Gum chewing in schools should be prohibited, for little folks know no better than to chew on one piece of gum for a week, possibly pass it around before it comes back to the owner. Suppose one of these children were infected with a dangerous disease and not be aware of it. What would be the result? As a rule ninety per cent will become infected, or as many as come in contact with the germs (and a good way to avoid

coming in contact, is to not chew your schoolmate's gum at recess, or use the same drinking cups).

Tobacco chewing is an ugly habit, and one, which once acquired, is very difficult to break. In the first place, it is very harmful, because it is a poison. For this reason it is a germicide, but is never used for that purpose. Here again as with gum, the teeth are overworked, there being also a great deal of sand and dirt in tobacco. The teeth in a few years are worn down to the gums, and are then very sensitive. The stains left on the teeth are very unsightly; the breath is awful. It certainly is a habit that should never be commenced. Tobacco is very severe on the nervous system; also on the lungs and heart. Every one ought to have too much pride to abuse the mouth and teeth in such a manner.

Smoking a pipe is even worse than chewing as regards disease, as the lips are constantly irritated by the warm stem of the pipe; constant pressure. It is an ugly, bad habit and should be avoided.

Many children get into the habit of breathing through the mouth when asleep; also at other times, when running or playing. Little or no attention is paid to the affair or the dangers that are more than likely to come from it. Many abnormalities come from mouth breathing, such as malformed or badly arranged teeth, bones abnormal and the shape of the face changed.

Breathing through the mouth is not always a habit. Some few persons have abnormal growths in the posterior part of the nose which prevent the air from entering or being expelled through the nose. These growths are called adenoids, and should be removed.

Mouth breathing is very bad for the breath, to the teeth, and will spoil the shape of the face and lips in growing children; the mouth being held open so much that the muscles are stretched out of shape, the mouth protruded, the bone will be likewise, and an operation for such conditions is very difficult, as there are so many things to overcome.

Another bad feature, is that of catching dirt and dust and flying material in the open mouth. It is almost like a trap ready to grab everything that comes in contact with it. And another bad thing is that of breathing cold air directly into the lungs; the air may be so cold that when breathed through the mouth into the lungs, a severe shock is produced; thus irritation, and later infection may result. So will the membranes of the bronchial tubes, vocal cords and throat be irritated and injured.

If the air is breathed through the nose, as nature intended it should be, these conditions are fewer and far between, and are generally brought about from another source. The hair in the nose act as a sieve; for that reason it is a protection against foreign material entering into the vital organs. It is caught in the meshes of hair and not allowed to go farther, and is carried away as waste material to the external surface by the nasal secretions.

Sleeping with the head under the bed clothing is a bad habit, oftentimes found in children. But little if any fresh air is breathed, the oxygen being consumed in a few hours, then breathed over and over again. This accounts for so many infants being found dead in bed. They suffocated for want of oxygen, though probably in the best of health.

Quit bad habits, live right, get plenty of sleep in well ventilated rooms, or in the open air; but keep the body warm and dry. Better health, fewer invalids and cripples will be the result.

The human race belong to the animal kingdom, and they abuse themselves and do that which they know is not right more than do any other living being. Without a doubt, the lower animals are rarely sick; when they are, it is generally man's fault. And why aren't they sick? Because they do not disobey nature's laws as do mankind. They are not closed up in small rooms and hot houses, and poisoned to death on contaminated air. They eat only foods that are suited to their nature, and will not eat such things as are not good for them, as a rule.

Biting and chewing on the finger nails is a dirty, and a very injurious habit to the fingers, teeth, lips, tongue, throat, lungs, stomach and intestines. Why? Because the hand and fingers are dirty, and under the finger nails is a very suitable lodging place for dirt and bacteria. They grow fast under them, for they are very well protected, and for this reason alone, the fingers should not be put into the mouth. Another reason, the nail is a hard substance and is wearing on the teeth; also from the fact that they are a hard substance, they are indigestible. Therefore, the stomach and intestines cannot take care of them, other than mix them with some solid food product and endeavor to throw them off as waste material. Probably they are not mixed properly, and like a sliver, find a lodging place (like a piece of drift wood going down stream finding a place to cling and there remain) in the lining of some tiny bloodvessel, nerve or organ. What would be the result? Ulcers, tumors, abscesses, liver or kidney trouble; in fact, anything may result. So little readers, please don't get the habit. If you do, quit it; not only these things are considered, but take a look at the fingers. They are unsightly, not the shape and contour nature made them; the nail is ragged and torn and sore from biting, and from lack of protection. This is the function of the nails, protection and beauty; destroy them and we have an abnormal condition, they bleed easily and are exceedingly annoying and show a weak mind, and no one wants to be weak minded.

Note the person whom you see continually biting the nails, and you will see a pale, weak, nervous, hysterical, unhappy person, with no end of poor health. Do you want to be such a person? "No," I hear thousands of little voices say. Well, then, follow this advice, and you won't be.

Probably one of the ugliest, filthiest, most thoughtless habits ever practised by the human race, is that of a mother chewing food and feeding a young baby from her own mouth, carrying the chewed mass with the fingers from her mouth to that of the little one, regardless of what condition her health may be

in, or the condition of the mouth and teeth. This article may sound ridiculous and absurd to many who read it, but it is surely practised every day among many, many people, thoughtless and ignorant. Then we raise thousands of dollars every year to fight the white plague to free and protect our great nation from foreign infection and invasion, when we might just as well teach these things which are wrong and should not be, to the people along with their common school education.

How are these people going to know better if they are not taught? And the young comprehend far quicker than do the adults. Teach the children, then we won't have to teach the older ones.

QUESTIONS.

1. Should a baby suck its fingers or thumbs? Why not?
2. What is a good way to stop the habit, when once begun?
3. Should babies have rubber rings and such things as the so-called pacifiers? (No, they are dirty and ruin the shape of the bone.)
4. What do you think of gum chewing? What harm does it do?
5. Does gum chewing affect the digestion? In what way?
6. In what way does tobacco injure the teeth?
7. Should one form the habit of breathing through the mouth?
8. Why should one breathe through the nose? Name the best reasons for doing so.
9. Is breathing through the mouth always a habit? (No, and indicates growths or closed air passages and should be cared for immediately.)
10. Is it bad for the general health to breathe cold air or dust into the lungs? Give the best reasons for not breathing through the mouth.
11. Why are people more sickly than the lower animals?

CHAPTER XXV.

Summary

Much has been said in these few pages regarding the care of the mouth and teeth. However, the writer wishes to impress the real value of the instructions and benefits that can be derived if followed and carried out; so a few last remarks just to remind you are necessary.

First of all, proper instruction and information regarding the teeth and the means and manner of caring for them; of the necessity of their replacement when lost, and treatment when diseased, is little or none. Many otherwise very intelligent persons are sadly deficient in knowledge of the welfare of their mouth, and frequently suffer from protracted derangement of general health which have unsuspected origin in the dental organs. Many physicians are ignorant of the subject and extract hundreds of teeth that ought to by all means be treated, filled and saved, as the case may be.

Proper mastication of the food preparatory to entering the stomach, cannot be properly done unless the teeth and mouth are in good condition. The food should be tasted, chewed and enjoyed to receive full benefit, as the old proverb goes "Laugh and grow fat." In addition to this fact, I repeat again the importance of the teeth in assisting vocalization, and natural facial expressions and features. These things alone, ought to suffice, for abundant reasons, for effort to awaken a general interest in the prevention and arrest of decay of the teeth.

The different parts which constitute the mouth form a very important and complicated portion of the animal economy, being connected by sympathetic relations with the entire organism of the body. These being facts, it is much to be lamented that

many thousands of parents are so neglectful of themselves and of their children, as not to have a daily routine of caring for the mouth, but allow the children to grow up untidy and never form the habit of cleaning the teeth. It is wrong, ridiculous, a crime. It ought to be the first teaching to the young child before it has teeth, to take a clean cloth and wipe and clean the mouth. Though as a rule, they are left alone until an aching tooth or an exposed pulp of the teeth, speak with a voice hard to control, announcing the mischief which has been allowed to proceed unchecked. The enemy has defeated, he has won, to our pain and sorrow.

Still more, it surely is wonderful that so many persons fail to appreciate the importance of caring for their teeth until compelled to do so by suffering. Then when the demand has become imperative, their chief thought seems to be, not how to prevent further mischief and retain what is left of the dental organs in as perfect condition as is possible, but how cheaply and how soon palliation of their discomforts can be secured; and as though there were no gradations in skill, or in value of materials used, making no account of the time required for faithful services, they think only of the cost, and congratulate themselves when they succeed in finding a cheap dentist, or highway hold-ups like the so-called dental parlors, where they are advertising one thing and doing another. Those people are a detriment to the whole world, and only for a small loop-hole in the law through which they squeeze, there would be none but first-class, conscientious dentists holding a title to practice dentistry. Cheap things always come high, and cheap dental or medical services is the poorest economy. Judgment and proficiency in any capacity are the results of hard labor and should be looked upon in the highest favor and esteem.

There is a vast difference in the liability of the teeth of different individuals as to decay. The teeth of some are so arranged through lack of nutrition at sometime during formation, that they are less resistant to the action of strong medicines and bacterial activity, and for this reason they decay soon as they

emerge from the gums; while others in the same mouth give no evidence of decay. Even in the same mouth some teeth are more susceptible to decay than others; probably shape and conditions are the cause; probably lack of development owing to constitutional disturbance while forming, resulting in varying degrees of density in their texture; consequently, less resistant to destructive agents.

However, with the absence of these peculiar conditions (or if they are present, greater care is due them for their preservation), with good, personal care, together with a frequent visit to a good dentist every four to six months, or oftener if necessary, so that the first evidence of disease may be met and combated, there is very little doubt that the majority of people would have perfect or good health to a ripe old age.

QUESTIONS.

1. What is the price paid for neglect and carelessness of the human body?
2. Should one neglect having their mouth and teeth, or any other part of the body properly taken care of? (No, a thousand times, no; better go with one or two good meals a day, and cheap clothing for the time being, than have diseases getting a foothold and a hiding place.)
3. What is the only cause of decay in the teeth? (Decomposed food stuffs and the work and secretions of bacteria.)
4. Will clean, well polished teeth decay? (No, for the germs are not allowed to harbor and do their work.)
5. At what age does a child begin to get the permanent teeth? (About the age of 6 years and continues to erupt new teeth until after 12 years, except the third molars.)
6. Should a person be careful and not let deposits of calculus collect on the teeth? (Yes, as it will eventually cause the loss of the teeth, and general health as well.)
7. What is the best method of cleaning the teeth and when should they be cleaned?
8. Can anyone be successful in life or be happy with a bad set of teeth, and a filthy mouth? (No.)

S. G. L.

SEP 3 1914

WU 80 T167m 1914

50630140R



NLM 05263418 5

NATIONAL LIBRARY OF MEDICINE